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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Jen Sheen et al.	Confirmation No.:	9364
Serial No.:	10/661,426	Art Unit:	1638
Filed:	September 12, 2003	Examiner:	A. Kubelik
Customer No.:	21559		
Title:	MASTER ACTIVATORS OF PATHOGEN RESPONSIVE GENES		

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY TO RESTRICTION REQUIREMENT

In reply to the Restriction Requirement that was mailed in connection with the above-captioned case on December 29, 2005, Applicants elect the invention of Group I, claims 1-10, and the MKK4 peptide. The election of the MKK4 peptide is made with traverse.

Applicants submit that examination of claims 1-10 as directed to DNA molecules encoding a kinase domain of a MAPKK polypeptide does not present an undue burden to the Office. As shown in Figure 2 of Ichimura et al. (Trends in Plant Science 7:301-308,

2002; copy enclosed with the concurrently filed supplemental information disclosure statement (“IDS”)) and Figure 3 of Hamel et al. (Trends in Plant Science 11:192-198, 2006; copy enclosed with the concurrently filed supplemental IDS) MAPKK polypeptides are conserved among numerous species. Examination of methods of using DNA molecules encoding the kinase domain of these highly related polypeptides in enhancing resistance to a plant pathogen in a plant does not present an undue burden to the Office because a search of a kinase domain of one MAPKK sequence should identify other MAPKK kinase domain sequences due to the conservation of kinase domain among MAPKK polypeptides.

Alternatively, Applicants submit that at least DNA molecules encoding MKK4 and MKK5 kinase domains should be examined together in the present application. As shown in Figure 8 of the specification, the MKK4 and MKK5 amino acid sequences are identical over long regions (100% identity over regions as long as 59 amino acids) and the proteins are highly homologous overall (82% identical in the alignment shown in Figure 8). In addition, as taught in the specification, for instance, at page 18, lines 15-24, MKK4 and MKK5 both activate expression of PAL1 and WRKY29 and, as taught, for instance, at page 25, lines 9-10, the function of MKK4 and MKK5 in flagellin (flg22) signaling are likely redundant in *Arabidopsis* leaf cells. As such, MKK4 and MKK5 are not only structurally highly similar, but also have similar functions. Moreover, MKK4 and MKK5 are conserved among a variety of plant species including tobacco, rice, potato, tomato,

and poplar.

In sum, given the highly conserved structure of MAPKK in general it would not present an undue burden on the Office to examine claims 1-10 as directed to DNA molecules encoding the kinase domain of a MAPKK polypeptide in the present application. Alternatively, as noted above, MKK4 and MKK5 not only are structurally highly similar, but also have similar and sometimes redundant functions in plant pathogen defense. As such, at least MKK4 and MKK5 should be examined together. Applicants respectfully request reconsideration of the restriction requirement.

Sequence Rules

The Office objects to the specification based on the assertion that the application does not comply with the sequence requirements of 37 C.F.R. §§ 1.821-1.825. In particular, the Office asserts that claims 27, 31, and 35 should refer to sequence identifiers and not to Figures 15 and 16. The claims, in the concurrently filed Preliminary Amendment, have been amended to refer to the recited sequences using sequence identifiers. This ground for objection should be withdrawn.

CONCLUSION

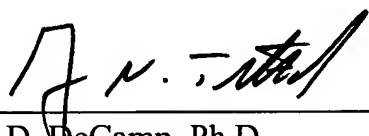
Applicants submit that the application is now in condition for allowance, and this action is hereby respectfully requested.

Enclosed is a Petition to extend the period for replying to the Restriction Requirement for two (2) months, to and including May 30, 2006, as May 29th is a federal holiday, and a check in payment of the required extension fee.

If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

Date: 25 May 2006



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